26.

REMARKABLE CASE OF ABSCESS OF THE DURA MATER AND BRAIN,

FOLLOWING A BLOW ON THE HEAD.

A Clinical Lecture.

BY

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REMARKABLE CASE OF ABSCESS OF THE DURA MATER AND BRAIN, FOLLOWING A BLOW ON THE HEAD.

GENTLEMEN,—I wish to direct your attention to-day to the particulars of a case of great practical as well as pathological interest, which has been in this hospital under my care during the past winter. Allow me to say, however, that the interest of the case does not by any means rest solely on the mere fact that it is a rare one, though that it certainly is. You may remember the remark made by Mr. Lister at the autopsy: "that it might not fall to the lot of any of you to see more than one such case in a lifetime". I say it is not merely because the case is a rare one that it becomes an interesting one; it is interesting because it brings into striking relief facts of *general* pathological significance and importance. It is an interesting case, too, because for a long period it was a mysterious one. We watched the case for nearly seven weeks without being able to say with certainty what was the real nature of the case we were watching, and three times during that period our patient appeared on the point of recovery.

On the 5th of last November, a well-built healthy-looking young man, twenty-one years of age, a Covent Garden porter, came into the out-patient room and complained that he had a sore-throat, was thirsty, had lost his appetite, and that he had some headache and giddiness. He told us he had never been ill before, that he occasionally drank hard, that he got drunk four days ago, and the symptoms of which he now complained came on the day after. So we made out that on Friday night he was drunk; on Saturday, he was giddy, had a headache, and lost his appetite; on Sunday, he vomited; on Monday, his throat became sore; and on Tuesday he came to the hospital. There were two other points in his story which we noted, either of which we thought might turn out to have some important relation to the

case. The first, which we found out afterwards, though not exactly a *suppressio veri*, was, at any rate, a *perversio veri*, was that a brick had fallen from a few feet upon his head ten days ago; and there was, indeed, a small scar to be seen, about an inch long, situated over the frontal bone on the right side, a little in front of the coronal suture. There was no pain or swelling around the scar. The other fact was, that he had been recently engaged in pulling down old houses.

We examined his throat, and found the fauces slightly congested. The tongue was a little coated; the skin hot and moist; the face flushed; pulse 100; temperature 102 deg.; bowels confined. The remark I made in the out-patient room at the time was, that we had before us a case of general febrile disturbance, of what precise nature it was impossible to say; that it was important not to lose sight of the fact that he had received a blow on the head; and that we had better take the case into the hospital and watch it.

On the evening of the same day (November 5th), his temperature rose to 105 deg., fell during the night to 102 deg., and remained at 102 deg. for the rest of the next day (November 6th). On the morning of the 7th, it was 99.6 deg.; rose in the evening to 102.6 deg.; on the morning of the 8th, it fell to normal; in the evening, it rose to 101 deg. On the morning of the 9th, the temperature was 97.2 deg., and it remained between this and normal for nearly two days; so that between the 5th and the 10th he had had a sharp febrile paroxysm, with a complete intermission; the temperature in that period ranging between 105 and 97.2 deg. During this paroxysm, he had perspired very profusely, and his back was covered with an unusually dark and spotty sudaminal eruption. He had also at times been a little drowsy.

At the end of the first week, the patient appeared convalescent. He had lost his headache; his tongue was clean, his temperature normal, his pulse 68. He said he "felt all right, only a little weak". But on the evening of the 12th the temperature began again to rise, and reached 101.6 deg., to fall the next morning (November 13th) to 98.2 deg.; then, on that evening, the temperature leaped up from 98.2 to 103 deg.

November 14th. Morning temperature, 102 deg.; evening, 102.8 deg.
November 15th. ,, ,, 101 ,, 103
November 16th. ,, ,, 100.4 ,, 103.2
November 17th. ,, ,, 100.6 ,, 104.2

This was the culminating point of a second febrile paroxysm. Then followed a second remission or intermission, and during the next three days the temperature fell steadily.

November 18th. Morning temperature, 99.8 deg.; evening, 102.4 deg.
November 19th. ,, ,, 100.8 ,, 102
November 20th. ,, ,, 98.2 ,, 99

During this second paroxysm of fever, he slept well, but sweated very freely at night; not so much so, however, as during the first paroxysm. His pulse ranged between 80 and 112, rising and falling

with the temperature. His tongue was moist, and but slightly coated. He complained occasionally of a little pain in the epigastric and right hypochondriac region; but there was no other evidence of gastro-hepatic derangement. Again he said, during this second defervescence, that he felt quite well, only weak.

November 21st. Morning temperature, 98.2 deg.; evening, 100.6 deg.
November 22nd. ,, ,, 97.4 ,, 98

After a remission of three days, on the evening of the 23rd, the temperature began to rise again.

November 23rd. Morning temperature, 98.8 deg.; evening, 101.2 deg.

And now another phenomenon made its appearance; viz., the occurrence of pain in the left elbow-joint, which soon became much swollen from effusion into the joint. Let me say at once that this could not have been pyæmic. It disappeared completely with warm fomentations, and subsequently blistering two inches above the joint; and, at the autopsy, the joint was found perfectly healthy.

November 24th. Morning temperature, 98 deg.; evening, 100.6 deg.
November 25th. ,, ,, 100.2 ,, 100.2
November 26th. ,, ,, 100.2 ,, 100.6

Hitherto we had been watching the course of the fever, without making any attempt to modify it by therapeutic agents; but, now that the temperature appeared to be slowly but steadily rising a third time, and as we had had no trace of cerebral symptoms, we began to think that he was suffering from some anomalous form of fever due to blood-contamination, and gave him full doses of quinine—three grains three times a day.

November 27th. Morning temperature, 99.2 deg.; evening, 101.4 deg.
November 28th. ,, ,, 99.2 ,, 100.4
November 29th. ,, ,, 99.4 ,, 99.4
November 30th. ,, ,, 100 ,, 101.8

As the temperature was again rising, the quinine was ordered to be given four times a day; and for the next four days the temperature did not rise above the normal.

December 1st. Morning temperature, 98.4 deg.; evening, 98.4 deg.
December 2nd. ,, ,, 98.2 ,, 97.6
December 3rd. ,, ,, 98.4 ,, 98.8
December 4th. ,, ,, 98.2 ,, 98.4

This, then, was a third febrile attack (modified, no doubt, by the quinine), and a third prolonged intermission. During the last four days, the patient said he felt quite well. His tongue was clean; his appetite good; his elbow was less swollen and much less painful; and he had excellent nights. He had made no complaint of headache for more than three weeks, and for a third time he appeared to be convalescent. He was, however, much emaciated.

On December 5th, a little rise in temperature and frequency of pulse was noted. The morning temperature was 99.6 deg., evening 100 deg.; pulse 120. He was still taking the quinine.

December 6th. Morning temperature, 100 deg.; evening, 99.8 deg.
December 7th. ,, ,, 99.6 ,, 99.8
December 8th. ,, ,, 99 ,, 99.6
December 10th. ,, ,, 98 ,, 97.6

Now occurred another sudden rise of temperature, notwithstanding the quinine, of which he was taking fifteen grains *per diem*.

December 10th. Morning temperature, 102.2 deg.; evening, 102.6 deg. He complained of some headache; so the quinine was stopped, and salicylate of soda (twenty grains) ordered three times a day.

December 11th. Morning temperature, 99.6 deg.; evening, 102 deg.
December 12th. ,, ,, 101 ,, 102.6
December 13th. ,, ,, 97.6 ,, 102.4
December 14th. ,, ,, 100.4 ,, 103.4
December 15th. ,, ,, 101.4 ,, 103.2

December 16th. Morning temperature, 104.2 (this was the acme of the fourth paroxysm of fever); evening, 102.6 deg. During the last three days, the rise of temperature had been accompanied by headache referred to the occipital region, and loss of appetite. Up to this period, with the exception of the occurrence of effusion into the left elbow-joint, we had had really nothing before us but an anomalous temperature. There was very little complaint of headache—none from November 8th to December 10th; and then it was merely coincident with an access of fever. But we were now rapidly approaching the *dénouement* of this mystery.

December 17th. Morning temperature, 101.2 deg.; evening, 103.6 deg.
December 18th. ,, ,, 100.6 ,, 101.4

The evening of this day, he complained a little of intolerance of light.

December 19th. Morning temperature, 100.2 deg.; evening, 99.6 deg. He complained of pain in the right side of the head and in the right eye.

December 20th. Morning temperature, 100 deg.; evening, 98.8 deg. Here the pyrexial stage terminated. The temperature had been steadily going down since the 16th, when he was ordered five grains of quinine every six hours. This was omitted when he began to complain of pain in the right side of the head on the 19th. By this time, he had become greatly emaciated.

It was not till December 21st, forty-six days after his admission into the hospital, that unmistakable cerebral symptoms began to manifest themselves; and, whereas the latent stage had been marked by acute paroxysmal pyrexia with well-marked intermissions, the cerebral stage commenced with a fall of temperature to 96.6 deg.; and this was associated with vomiting and profuse perspiration. At this time, he became very drowsy, with a heavy expression of countenance, and complained of great pain in the right side of the head. It was now noted that the mouth was drawn a little to the right side. The pupils were equal; but there was marked photophobia. There was no loss of power in the limbs; no loss of sensation anywhere. The abdomen was retracted; pulse 116; respirations 32. Ice was applied to the head, and this relieved the pain considerably.

From December 21st to the 28th, there was much less complaint of pain in the head. The chief symptoms during this period were drowsiness, vomiting from time to time, and slight facial paralysis, which was confined to the lower half of the face. The temperature was (since the 21st) taken in both axillæ, with the following results.*

	Right.		Left.	
	Morning.	Evening.	Morning.	Evening.
December 21	97.6	99	98.6	98.4
,, 22	98.1	99.2	98.2	—
,, 23	99	99.4	97.6	99.2
,, 24	97	98.8	97.8	99
,, 25	—	—	—	—
,, 26	97.2	98.4	97	99
,, 27	95.2L	97	95.6	96.2
,, 28	96.6	96.6	96.8	96.6

Since the case had assumed this decidedly cerebral aspect, we began to make further inquiries about the blow on the head; and we learnt now for the first time that the story of a brick falling on his head was a fabrication. The truth was that, in a drunken brawl with his wife, she had struck him a heavy blow on the head with a quart pewter-pot; but we could not find out the precise date at which this occurred.

On the 29th, the patient complained more of headache, and about 9 A.M. he had a general convulsion. He became rigid and insensible, and during the convulsion the mouth was drawn to the left. When he was seen again about noon, the mouth was drawn to the right. He was heavy and drowsy; pulse 64; pupils equal and reacting to light.

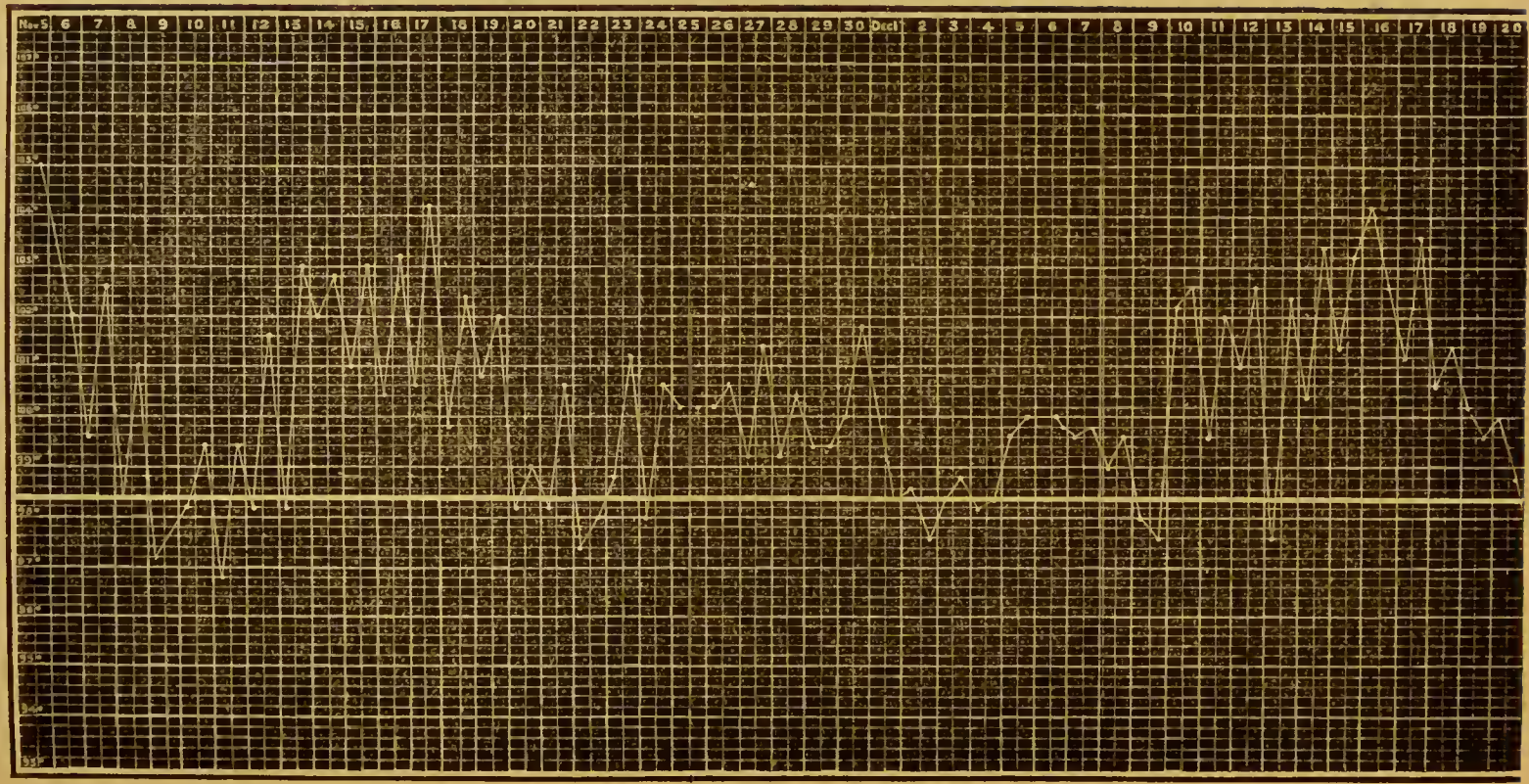
The following is Mr. Soelberg Wells's note of the ophthalmoscopic appearances which he found when he kindly examined the eyes at this time.

"On account of the semicomatose condition of the patient and the constant involuntary movements of the eyes, the ophthalmoscopic examination was rendered peculiarly difficult. In the right eye, there were well-marked symptoms of neuro-retinitis. The optic disc was opaque and swollen; its outline was indistinct, and passed over gradually and without any sharp line of demarcation into the retina, which was also opaque and hazy, this opacity extending to some distance from the optic disc (about twice its diameter). The retinal veins were dilated and tortuous, and hidden here and there by the retinal opacity. Small striated hæmorrhages were noticed at the margin and on the surface of the disc. The region of the yellow spot was free from any stellate white opacities. In the left eye, all these symptoms were much less marked. The disc was less swollen; the retina less opaque; the veins not so dilated and tortuous; and there were no retinal hæmorrhages."

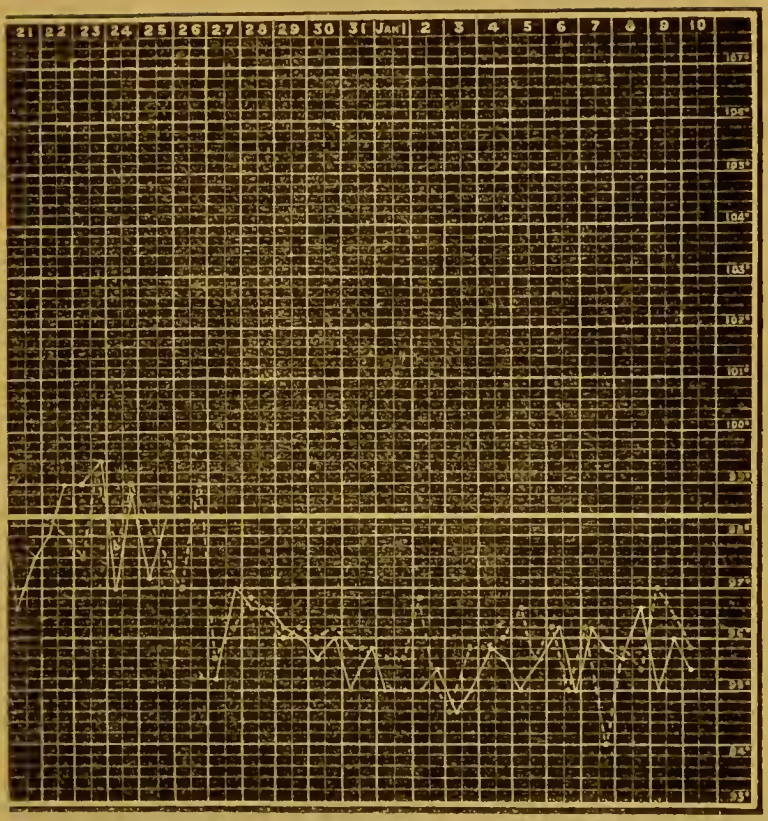
There was but little change in his condition for the next few days. He lay in a heavy, drowsy, apathetic condition, answering questions when spoken to slowly and with a little hesitation; but there was never any incoherence or delirium. Every now and then he would cry out with the pain in his head.

* The dotted lines in the chart show the temperature in the left axilla.

Chart showing Daily Variations of Temperature.



(Temperature Chart continued.)



On January 1st, there was an evident loss of power in the left hand and arm; but this was temporary. On the 3rd, he appeared much weaker; tongue thickly coated; pulse 56; urine passed unconsciously. He was very drowsy; his face was flushed; he sighed frequently. On the 5th, he had a rigor lasting three or four minutes. On the 7th, he was noticed to be very restless, and yawned frequently; but on the 8th he seemed better, and not so drowsy. On the 10th, he was again very restless. On this day, I had arranged a consultation with Mr. Lister, with the view of considering whether trephining might not be performed with advantage; but on the afternoon of this day he died quite suddenly. About four o'clock, he was talking to Dr. Buzzard and myself, and answering our questions quite clearly, though slowly and hesitatingly; and at five o'clock he died, two months and five days after his admission into the hospital, and three weeks after the appearance of decidedly cerebral symptoms.

The following were the temperatures taken in both axillæ during the last twelve days of his life. They range between 94 and 97 deg. You will not fail to notice that, with the onset of the cerebral symptoms proper, the temperature rapidly dropped to a subnormal range.

	Right.		Left.	
	Morning.	Evening.	Morning.	Evening.
December 29	96.2	96	96	96.2
,, 30	95.6	96	96	96.2
,, 31	95	95.8	95.6	95-8
January 1	95	95	95.6	95.6
,, 2	95	95.4	96.8	95
,, { 2	94.6 (right ear)		95.8 (left ear)	—
,, { 2	94.2 (right groin)		93.6 (left groin)	—
,, 3	94.6	95.2	94.6	95.8
,, 4	95.8	95.6	95.8	96
,, 5	95.8	95.6	96.6	95.2
,, 6	96.2	95	96.2	95
,, 7	96.2	95.8	96.2	1.94
,, 8	95.6	96.6	95.8	95.4
,, 9	95	96	H97	96.4
,, 10	95.4	—	95.8	—

So you see we had a very remarkable range of temperature in this case, extending from 94 to 105 deg.; and we might roughly divide it into a period of high temperature and a period of low temperature. During the former, we had no brain-symptoms proper; during the latter, we had brain-symptoms. You will not fail to notice also how very irregular are the variations in the temperature on the two sides.

I will now proceed to describe to you the appearances which we found at the autopsy of this remarkable case.

In the first place, a linear cicatrix, perfectly white and hard, about an inch and a half long, was found in the scalp on the right side of the vertex, running from before backwards and outwards, and ending a quarter of an inch in front of the coronal suture. Its anterior extremity was three-quarters of an inch and its posterior an inch and a quarter from the median line. It very nearly corresponded with the frontal prominence. On removal of the scalp, the bone in this situation was seen to be of a redder colour than the corresponding portion on the opposite side, and also to be decidedly more prominent and a little rougher.

Upon lifting the skull-cap, a shallow abseess in the dura mater was opened, having a ragged irregular outline, and measuring about an inch or an inch and a half in diameter, corresponding very nearly in situation with that of the external scar on the scalp. It was a little more central, as it lay over the anterior portion of the longitudinal sinus, extending about an inch to the right and a quarter of an inch to the left of it. On removing the skull-cap, the upper portion of the sac of the abscess was torn off and remained adherent to its inner surface. The bone, where it was in contact with the wall of the abscess, was white and smooth; but around it, extending for a considerable distanee anteriorly, the bone was red, rough, and thickened. There was no trace of any fracture. The abscess contained a very small quantity of thick tenaeious yellow pus; its walls were thick and serrated at the margins: an appearanee due to the forcible separation of the upper wall of the sac in the removal of the calvarium.

The longitudinal sinus was next carefully opened from behind, and was found to pass under the sac of the abseess. It was occluded by a thrombus, whieh extended from a point opposite the centre of the

abscess to the origin of the foramen cæcum; so that the longitudinal sinus, for about the anterior third of its course, was converted into a firm round cord, which, on transverse section, had a yellowish-white appearance; and, on squeezing it, pus exuded from the more central part.

A portion of the dura mater was firmly adherent to the surface of the frontal lobe; and through this adherent portion a round venous cord, connected with the longitudinal sinus, could be traced descending over the frontal lobe towards the middle fossa of the skull, and losing itself in the fissure of Sylvius. This cord, which was undoubtedly a vein plugged by a thrombus, was white and firm on tranverse section, and no pus exuded from it on compression.

A slight depression was observed on the surface of the brain, corresponding to the situation of the abscess in the dura mater. The cerebral convolutions appeared flattened, and the brain-substance rather dry and anæmic. Some little difficulty was experienced in removing the brain from the right middle fossa, on account of adhesions of the membranes to its surface; and a small quantity of pus escaped from the substance of the brain in its removal. This was found to proceed from a small sac in the lower third of the ascending frontal convolution above and in front of the fissure of Sylvius. This abscess was not much bigger than a filbert. It formed a sort of pouch, with its base directed towards the fissure of Sylvius, the lips of which were more or less glued together by inflammatory adhesions.



After the removal of the brain, the right temporo-sphenoidal lobe was seen to be much distended, and was soft and fluctuating to the touch. On puncturing it, a considerable quantity of thin, yellowish, curdy, puriform fluid escaped. The cavity in the temporo-sphenoidal lobe from which this proceeded was found to extend backwards as far as the posterior extremity of the optic thalamus, and to be separated

from the lateral ventricle by only a thin layer of cerebral substance. There was no communication with the ventricles, which presented a healthy appearance. The cavity of this second abscess was of large size, as large as a hen's egg, and contained, mixed with the thin yellowish flocculent material I have described, a small amount of blood-clot, a portion of which was adherent to the wall of the abscess, and probably proceeded from the rupture or ulceration of the coats of a vein, the main trunk of which had been occluded by a thrombus. It is important to notice that the cavities of both abscesses were lined by a distinct membrane.

Mr. Barrow has been good enough to make some sections of the affected portion of the frontal bone. It presents the microscopical characters of osteitis; viz., condensation of the deeper layers, rarefaction of the superficial ones, but no trace of suppuration.

I have now related to you in detail the clinical and anatomical facts which were observed in this case: let us next inquire what are the questions which it naturally introduces to our consideration, and what light it throws upon them. In doing so, I will endeavour to restrict my remarks as far as possible to points having more or less direct reference to the case before us.

Let us, then, consider what bearing this case has, first, on the causes, the symptoms, and the diagnosis of cerebral abscess; secondly, on the latency of cerebral abscess (this will lead us to consider the probable period at which the cerebral abscess in this case was formed). In the third place, we must dwell for a moment on the remarkable temperature we encountered in the course of this case, simulating as it did an anomalous kind of intermittent fever. Fourthly, we may attempt to answer the question, Was surgical interference called for at any period in its course? Fifthly: Had the affection of the elbow-joint anything to do with the cerebral mischief; and, finally, does the case throw any light on the question of cerebral localisation?

Of the causes of abscess of the brain, one of the commonest is inflammation of the middle ear, leading to caries of the petrous portion of the temporal bone; and in this disease the suppurative inflammation often extends, as it appears to have done in the case before us, by exciting phlebitis of one or more of the cerebral sinuses and their tributary veins, which become occluded by purulent thrombi. Injuries of the skull attended with fracture also not infrequently lead to the formation of cerebral abscess, as may readily be understood; but abscess of the brain arising from a blow on the head without fracture is a comparatively rare occurrence. It is, however, well known that this may occur, as Sir William Gull long ago pointed out. "In such cases," he says, "the injury excites inflammation and suppuration of the diploë of the bone, and the suppuration extends and involves the brain." But it was not exactly so that the abscess of the brain arose in this case, for examination of the bone reveals no evidence of suppuration in its substance. It would seem that the primary seat of suppuration was that

part of the dura mater lying immediately under the injured and inflamed bone. Here a small, distinct, circumscribed, and encysted collection of pus was formed; the suppurative inflammation extended to the portion of the longitudinal sinus beneath it, which became plugged by a thrombus; and thence it further extended into a large collateral tributary vein, and excited suppurative foci in the two portions of the cerebral substance which I have described before.

The symptoms of cerebral abscess are by no means characteristic; they must necessarily be dependent on the situation of the abscess. They may, as we shall presently see, be entirely absent. Pain in the head, continuous and severe, is generally regarded as one of the most constant, and sometimes is the only, symptom present for months. In this case, pain was by no means prominent until the appearance of other cerebral symptoms. Rapid emaciation has also been pointed to as a striking feature in many cases, and we remarked the great emaciation in this case even when the patient protested that he felt quite well; but, since it was coincident with the occurrence of sharp febrile paroxysms, they seemed sufficient to account for it.

The mental symptoms in this case were precisely those which have been described by Sir William Gull. "Now and then," he says, "the only (mental) symptoms were a heavy expression, a disinclination to speak, and indifference to surrounding objects." Slow and difficult, but perfectly clear cerebration is the description I should apply to the mental condition of this patient even to within an hour of his death. If you asked him a question, after waiting a little time, and just when you thought he could not have heard it, and were on the point of repeating it, the answer would slowly come.

I have already said that the symptoms of cerebral abscess, especially those connected with sensation and motion, must necessarily depend on the locality it occupies; and from this point of view it has been pointed out by Huguenin, in the twelfth volume of Ziemssen's *Cyclopædia*, that, in the case of abscess of the temporal lobe, where our patient's largest collection was situated, "the difficulty of diagnosis is increased by the circumstance that no bands of fibres, which are direct conductors of sensibility or motion", pass through this lobe; and therefore an abscess in that lobe "may attain a considerable size, and may cause general symptoms of compression before any distinct symptom of local disease arouses the suspicion of a localised affection of the brain; and for this reason the acute abscesses belonging to this category, in the great majority of cases, have not been positively diagnosed".

If general convulsions occur in the course of cerebral abscess—and our patient had one such attack—they must be due, as the same author points out, to some cause that acts on the entire brain, such as interruption of the circulation by the pressure of the swelling focus.

Practically, the diagnosis of cerebral abscess depends on collateral circumstances. Given certain symptoms, do they or do they not coincide with a known or possible injury to the skull, or with disease of the ear, or with the coexistence of suppurative foci elsewhere?

But the diagnosis of cerebral abscess is proverbially difficult, and chiefly on account of the latency of its symptoms, of which I must now say a few words. Sir William Gull says that "abscess" following injury to the head "may remain latent for months or even longer"; and, again, "an abscess may lie latent in the brain for many months, and then acute symptoms may suddenly set in and the patient die in a few days". The writer in Ziemssen whom I have already quoted is equally emphatic on this head. "An acute encephalitis following a non-perforating injury of the head can run its course without one having a suspicion of its existence"; and, again: "Cerebral abscesses have been found especially in the temporal lobes, the existence of which had not been betrayed during life by a single symptom".

So it is certain—and I wish particularly to call your attention to this—that, with the history of the recorded observations of cerebral abscess before us, it is impossible to form any positive opinion as to the period at which the abscesses were formed, which we discovered at the autopsy of the case we are discussing. They may have existed when he first came into the hospital. They were undoubtedly not very recent, for they were both encysted. If, however, as Dr. Ferrier believes, the smaller abscess in the ascending frontal convolution occupied the seat of the facial centre, and so gave rise to the partial facial paralysis which was observed, the formation of this abscess and the occurrence of the facial paralysis ought to have coincided in point of time; and the facial paralysis was first noticed on December 21st, *i.e.*, forty-six days after his admission and twenty days before his death.

Next let us consider the question of temperature, which ran such a remarkable course in the case before us, simulating an anomalous kind of intermittent fever. The fact that the course of cerebral abscess may simulate that of some forms of fever had not escaped the notice of Sir William Gull, for he says: "Patients suffering from cerebral abscess may have symptoms so closely resembling continued fever, that it is extremely difficult, if not impossible, with any degree of certainty to say whether it is a case of fever or of organic disease of the brain." Huguenin, in the twelfth volume of Ziemssen, says: "Two cases occurred to us which, in consequence of our total ignorace of etiological factors and the entire coincidence of the symptoms with intermittent fever, were regarded as such." One of these cases he reports in full, and it bears some resemblance to this case. The case began with a high temperature (105 deg.) and sweating; then freedom from fever for four days. No head-symptoms. Then again a rise of temperature extending over three days, and reaching 103.2 deg.; and "energetic treatment with quinine". Then seven days of freedom from fever, but occasional vomiting, "attributed to quinine"; and frequent complaint of headache. But there was no further rise of temperature, and the resemblance to an intermittent or remittent form of fever was by no means so complete as in this case. Moreover, the case ran its course (as reported) in twenty days. Now, in the case before us, for twenty

days no medicine was given; for we were anxious to discover the natural type of the fever, and it was not until the commencement of the third paroxysm that we began to give quinine. In Huguenin's case, an abscess was found in the left frontal, and another in the right temporal lobe. "This case",* the author adds, "shows that abscess of the brain may be mistaken for intermittent fever, especially for one of irregular form; and the error is hardly to be avoided."

The occurrence, however, of a continued range of subnormal temperatures coincidently with the development of cerebral symptoms, and after a prolonged intermittent pyrexia, seems to be now recorded for probably the first time.

I would call your attention also to the variations in the temperature on the two sides of the body, which were most carefully noted by our house-physician, Mr. Matthews, from the onset of the cerebral symptoms to the patient's death. Though these variations were at times considerable, differences of from 1.4 to 2 deg. being four times registered — viz., 1.4, 1.8, and 2. deg. — no regularity whatever could be traced in these variations. Sometimes the left side would give the higher temperature, sometimes the right; so that these variations, though interesting to observe in themselves, were of no diagnostic value.

Another question which I proposed for consideration was whether surgical interference was called for at any period in this case. Mr. Lister, who was present at the autopsy, appeared to think that trephining, with antiseptic precautions, might have been of value, if it had been resorted to as soon as the cerebral symptoms became manifest. I do not for one moment doubt that it would have been a perfectly justifiable proceeding; and, had I had an opportunity of consultation with Mr. Lister at an earlier period in the case, I should have readily consented to the operation. The abscess in the dura mater would thus have been evacuated, and the pressure of its contents on the surface of the brain removed; but I can scarcely doubt that, at any rate, the large collection of fluid which we found in the temporal lobe, enclosed as it was in a thickish cyst, was of earlier date. The purulent phlebitis also probably existed some time before the onset of cerebral symptoms; so that I cannot think the patient's life would have been saved by surgical interference, unless this had been had recourse to long before the symptoms appeared which seemed to justify it.

Then, again, what was the meaning of that curious affection of the left elbow-joint? It was not pyæmic; it disappeared completely after blistering, and no trace of mischief was found in the joint after death. Had it any relation to the brain-mischief? I do not know.

Finally, does this case throw any light on the localisation of cerebral functions? Every case of cerebral disease which comes into the *post mortem* theatre is now anxiously interrogated with regard to this important pathological and physiological question. Now, there was a local

* The full report of this case will be found in Ziemssen's *Cyclopædia*, vol. xii, page 765.

muscular paralysis in this case; that is to say, there was slight paralysis of the muscles of the lower half of the left side of the face. The loss of power in the left hand and arm was only temporary. It must be admitted, therefore, that the seat of the lesion in this case tended to confirm the theory of localisation; for the abscess in the ascending frontal convolution was situated in that portion of the surface of the brain which has been termed by Ferrier and others the facial centre: the portion which appears to preside over the movements of the lower facial region. This centre—*i.e.*, the facial—is in juxtaposition to the centre for the arm and hand; and this again is consistent with the temporary loss of power observed in the left hand and arm in this case. It is important also to notice that speech was unaffected in this case; and this affords a further confirmation of the almost universal association of aphasia with disease of the left hemisphere. "Had the lesion been in the corresponding part of the left hemisphere," as Dr. Ferrier observes in a note to me, "some affection of speech would certainly have been observed."